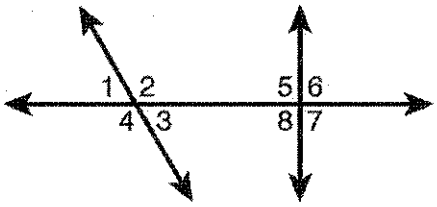
Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Geometry Chapter 7 Practice Test

B

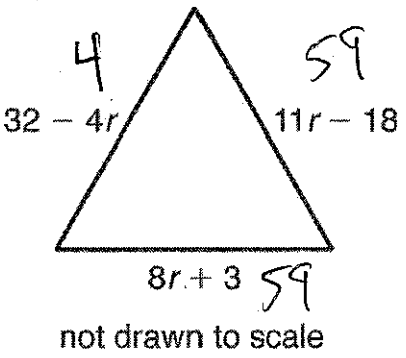
1 Identify the kind of angle pair represented by $\angle 4$ and $\angle 6$.



A) alternate interior angles
B) alternate exterior angles
C) corresponding angles
D) same-side interior angles

C

2 The perimeter of the triangle is 122 feet.



not drawn to scale

$32-4r+11r-18+8r+3=122$

$15r+17=122$

$-17 \quad -17$

$\frac{15r}{15}=\frac{105}{15}$

$r=7$

Classify the triangle according to its sides.

A) scalene
B) equilateral
C) isosceles
D) right

D

3 Two angles of a triangle measure 29° and 43°. What is the measure of the third angle?

A) 18°
B) 28°
C) 78°
D) 108°

$180-(29+43)$

108°

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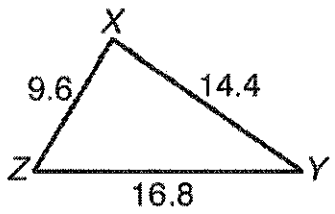
D

4 Mark wants to use coordinate proof to determine whether or not the diagonals of a square are congruent. Which coordinates could Mark use to represent the square?

A) $(0, 0), (a, 0), (0, a), (b, b)$
B) $(0, 0), (a, 0), (0, b), (-a, b)$
C) $(0, 0), (a, a), (b, b), (c, c)$
D) $(0, 0), (-a, 0), (0, a), (-a, a)$

B

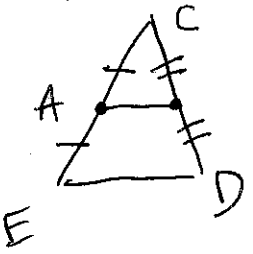
5 Which list shows the angles in order from greatest measure to least measure?



A) $\angle X, \angle Y, \angle Z$
B) $\angle X, \angle Z, \angle Y$
C) $\angle Y, \angle X, \angle Z$
D) $\angle Y, \angle Z, \angle X$

6 $\overline{AB}$ is a midsegment of ΔECD. Point A is on $\overline{EC}$, and point B is on $\overline{CD}$. Determine whether the two triangles formed are similar. If so, write the similarity ratio and a similarity statement.

Yes, 2/1 △ECD ~ △ACB



7 The scale for a blueprint is 1 : 50. What is the length on the blueprint for a bathroom wall that is 150 inches long?

3in

$\frac{1}{50} = \frac{x}{150}$

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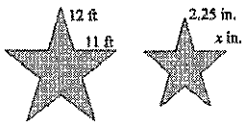
8 A star-shaped garden has the dimensions shown. A scale drawing of the garden has the dimension shown. Find x to the nearest hundredth of an inch.



2.06 in

$\frac{12\text{ ft}}{2.25\text{ in}} = \frac{11\text{ ft}}{x\text{ in}}$

$\frac{24.75}{12} = \frac{12x}{12}$

9 Give an example of a transformation that is NOT a similarity transformation.

$(x, y) \rightarrow (ax, by)$

10 Describe the dilation D: $(x,y) \rightarrow \left(\frac{7}{8}x, \frac{7}{8}y\right)$.

Reduction

11 Tell how polygon $E(5,0)$, $F(9,4)$, $G(7,2)$, $H(0,-1)$ was mapped to polygon $J(12,6)$, $K(18,12)$, $L(15,9)$, $M(4.5,4.5)$.

$(x,y) \rightarrow (x+3, y+4)$

$(x,y) \rightarrow (1.5x, 1.5y)$

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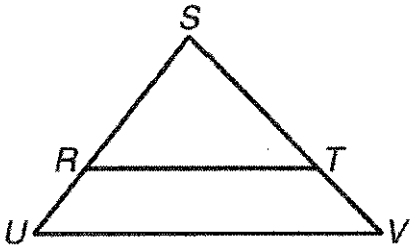
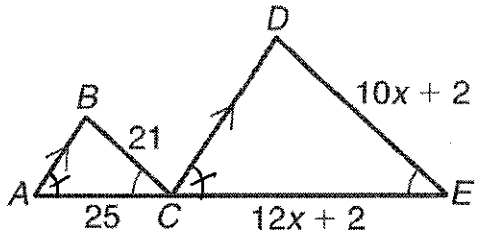
12 **Given:** $SE = 2RU$ and $ST = 2TV$.
Prove: $\Delta USV \sim \Delta RST$



This doesn't have to be written as two column proof.

$SE = 2RU$, $ST = 2TV$	Given
$\frac{SR}{RU} = 2 \div \frac{ST}{TV} = 2$	$\div$ =
$\frac{SR}{RU} = \frac{ST}{TV}$	Trans Prop =
$\angle S \cong \angle S$	Reflex
$\Delta USV \sim \Delta RST$	SAS~

13 Find DE.



42

$$\frac{10x+2}{21} = \frac{12x+2}{25}$$

$$21(12x+2) = 25(10x+2)$$

$$252x + 42 = 250x + 50$$

$$-250x - 42 \quad -250x - 42$$

$$2x = 8$$

$$x = 4$$

$$DE = 10x + 2$$

$$10(4) + 2$$

$$40 + 2$$

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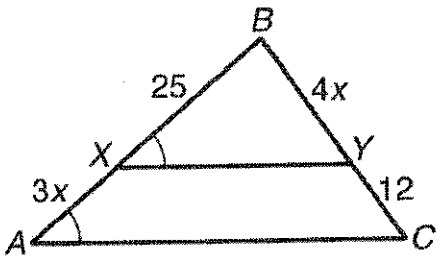
14 Find AX.



15

$\frac{25}{3x} = \frac{4x}{12}$

$\frac{25}{3x} = \frac{x}{3}$

$75 = 3x^2$

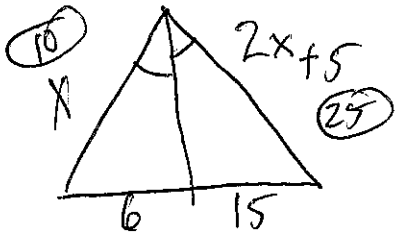
$\frac{75}{3} = \frac{3x^2}{3}$

$x^2 = 25$

$x = \pm 5$

$AX = 3x = 3(\pm 5) = \pm 15$

15 One side of a triangle is 5 centimeters longer than twice another side. The ray bisecting the angle formed by these sides divides the opposite side into 6- and 15-centimeter segments. Find the perimeter of the triangle.



56 cm

$\frac{x}{2x+5} = \frac{6}{15}$

$6(2x+5) = 15x$

$12x + 30 = 15x$

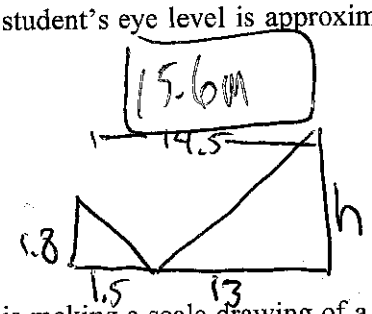
$3x = 30$

$x = 10$

$P = 10 + 25 + (6+15)$

$10 + 25 + 21$

16 To find the height of a billboard, a student placed a mirror on the ground 13 meters from its base. The student was 14.5 meters from the billboard before being able to see the top of the billboard in the mirror. If the student's eye level is approximately 1.8 meters, how tall is the billboard?



$\frac{h}{13} = \frac{1.8}{1.5}$

$1.5h = 23.4$

17 A landscaper is making a scale drawing of a rectangular courtyard. The courtyard is 10 yards by $13\frac{1}{3}$ yards. If the landscaper uses a scale of 1 in : 4 ft, what should be the length of and width of the drawing?

$\frac{1}{4} = \frac{l}{30}$

$\frac{4l}{4} = \frac{30}{4}$

$l = 7\frac{1}{2}$

$7\frac{1}{2}$ in x 10 in

$\frac{1}{4} = \frac{w}{40}$

$13\frac{1}{3}$ yd

40 ft

10 yds

30 ft

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18 ΔRST has vertices $R(1,1)$, $S(4,1)$, and $T(3,3)$. Two vertices of ΔXYZ are $X(0,-1)$ and $Y(6,-1)$. Find two different locations for vertex Z so that $\Delta RST \sim \Delta XYZ$ Graph.

Z (4,3)

Z (4, -5)

19 **Given:** ΔABC has vertices $A(-2,1)$, $B(-1,3)$, and $C(2,0)$. ΔDEF has vertices $D(-4,0)$, $E(-2,-4)$, and $F(4,2)$.

Prove: $\Delta ABC \sim \Delta DEF$

$AB = \sqrt{5}$

$AC = \sqrt{17}$

$BC = 3\sqrt{2}$

$DE = 2\sqrt{5}$

$DF = 2\sqrt{17}$

$EF = 6\sqrt{2}$

$\frac{AB}{DE} = \frac{1}{2}$; $\frac{BC}{EF} = \frac{1}{2}$ $\frac{AC}{DF} = \frac{1}{2}$

SSS

$AB = \sqrt{(-1--2)^2+(3-1)^2}$

$= \sqrt{(1)^2+(2)^2}$

$\sqrt{1+4}$

$\sqrt{5}$

$DE = \sqrt{(-2--4)^2+(-4-0)^2} = \sqrt{(2)^2+(-4)^2}$

$= \sqrt{4+16} = \sqrt{20}$

$\sqrt{4}\ \sqrt{5}$

$AC = \sqrt{(2--2)^2+(0-1)^2}$

$\sqrt{(4)^2+(-1)^2}$

$\sqrt{16+1}$

$\sqrt{17}$

$DF = \sqrt{(4--4)^2+(2-0)^2} = \sqrt{(8)^2+(2)^2}$

$= \sqrt{64+4} = \sqrt{68}$

$\sqrt{4}\ \sqrt{17}$

$BC = \sqrt{(2-1)^2+(0-3)^2}$

$\sqrt{3^2+3^2}$

$\sqrt{9+9} = \sqrt{18}$

$\sqrt{9}\ \sqrt{2}$

$EF = \sqrt{(4--2)^2+(2--4)^2} = \sqrt{6^2+6^2}$

$= \sqrt{36+36} = \sqrt{72}$

$\sqrt{36}\ \sqrt{2}$